

Wild goose, *quà-hāw-quunt*.
 Winding, *apaas suc-tucqut*.
 Winter, *pooponu* ; *iluppoon*, H. ; C.
pipon ; N. Eng. *popon*.
 Wife, *nee-eeswah* ! (lit. "my wo-
 man").
 Wise, *wee-sauce*.
 Woman, *acquahique* ; *aquahoag*,
 H. ; Len. *ochqueu*.
 Wood, *meeh-shiz* ; *michsez*, H. ;
 Len. *mīnschi* ; Pot. *musses*.

Woods, *pamp tuck-koisk* ; Len.
tékene ; Sh. *teikou*.

Year, a, *nuquolacutquomai* (see
 "Month").

Yes, *a-a-mch* !

Yesterday, *holacquow*.

Yellow, *wee-sa-way-u* ; Len. *wisa-
 weu*.

You, *kee* (= thou).

Young, *laimaisu* (see "Small").

- 1, *nukquit*.
- 2, *na-eez*.
- 3, *nis* (*whu*).
- 4, *yaguh* (*whu*).
- 5, *nup-pai-a*.
- 6, *noqūttah*.
- 7, *my-yay-wah*.
- 8, *tzah*.
- 9, *passa-conque*.
- 10, *millah* !
- 11, *ah!tzickquit*.
- 12, *ahltz-naeez*.
- 13, *ahltz-whus*.
- 14, *ahltz-yough*.
- 15, *ahltzup-pay-ah*.
- 16, *ahltzaquutah*.
- 17, *ahltz mayaway*.

- 18, *ahltz-wah*.
- 19, *ahltz-passa, conque*.
- 20, *nee-es-mittah*.
- 21, *neequa-nichquit*.
- 30, *su-pooks-kay*.
- 40, *yow-pookay*.
- 50, *nuppay-e poosquah*.
- 60, *nequttah-e poosquah*.
- 70, *may-ah-wa-e poosquah*.
- 80, *tzaw-e poosquah*.
- 90, *passaconque-e poosquah*.
- 100, *weemba kissana*.
- 200, *neesa kissana*.
- 300, *nuisswa kissana*.
- 400, *you-wah!kissana*.
- 500, *nuppaia tashakissana*.
- 1000, *muttah-taska kissana*.

*Second Addition to the Knowledge of the Batrachia and Reptilia of
 Costa Rica.*

By E. D. Cope.

(Read before the American Philosophical Society, November 17, 1893.)

The present paper is a second supplement to a memoir on the Batrachia and Reptilia of Costa Rica, published by myself, in the *Journal of the Academy of Natural Sciences of Philadelphia*, for 1875, p. 93. The first supplement is a brief one, and was published in the *Proceedings of the American Philosophical Society*, 1879, p. 271. The whole number of species enumerated up to the latter date was one hundred and thirty-three.

The present supplement is based on material which I have received from my friend, Mr. George K. Cherrie, who is an officer of the Museo

Nacional, of San José. This material differs from that described in former papers in the fact that it was mainly obtained on the Pacific slope of the country,* while the latter was collected on the Atlantic slope and on the central plateau. In the enumeration which follows, the localities are mentioned in greater detail. The total number of species sent by Mr. Cherrie is thirty-three, of which sixteen are additions to the fauna of Costa Rica, and nine are new to science. I hope to be able to figure these species at an early day.

BATRACHIA.

URODELA.

HAPTOGLOSSA PRESSICAUDA, gen. et sp. nov.

Char. gen.—Group of Thoriinae, which includes *Thorius* Cope and *Typhlotriton*† Stejneger; hence the vertebrae are opisthocœlous and the carpus and tarsus not ossified. Tongue adherent in front and by the middle. Digits not distinct, 4-5.

This genus is of much interest as the first one discovered in Tropical America in which the tongue is not boletoid in form. It seems also that the relation of this form of the western coast to those of the east coast in this group is the same in Costa Rica as that which prevails in North America. It is well known that no species of salamander, with a boletoid tongue, is found on the Pacific coast of North America.

Char. specif.—Form slender, limbs very small. Length of tail equals that of the body without the head. Length of head contained in that of the body to the vent, seven and a half times; the width less than the length. A gular and nineteen costal folds, the latter not very distinct. Fore and hind limbs each equal to three intercostal spaces. Digits indicated by emarginations of the foot border. Vomerine teeth in two moderately arched transverse series, not produced posteriorly on the middle line, hence well separated from the rather wide single patch of parasphenoid teeth. Tongue rather small, oval. Nostril of moderate size, situated well anteriorly. Eye, large. Tail compressed from near base to apex, with a median dorsal, but no ventral groove, and well-marked vertical grooves.

Color, uniform black; under side of head and tail a little paler than other regions.

<i>Measurements.</i>	MM.
Total length	62
Length to posterior angle of mouth	4
Length to fore limb	8
Length to hind limb	28.5
Length to base of tail	31.5
Width of head at angle of mouth	3

This species resembles superficially the three small salamanders of

* The only exceptions are Nos. 338, 339, and 347.

† For the place of this genus, see Cope, *Proceeds. Acad. Phila.*, October, 1893.

Mexico and Central America, the *Thorius pennatulus* Cope, and the two species of *Edipina* (*Opheobatrachus*). Besides the generic characters, it differs from the latter in the shorter and compressed tail, etc. From the former it differs in the larger number of costal folds, smaller nostril, and in coloration, etc. The single specimen was found at Palma, and is No. 293 of the collection.

EDIPUS VARIEGATUS Gray. From Buenos Ayres, No. 301.

SALIENTIA.

BUFO MARINUS L. Lagarto, Nos. 342, 345; Buenos Ayres, Nos. 305-312.

BUFO HÆMATITICUS Cope. Buenos Ayres, 310; Rio Grande, 366.

HYLA GABBII Cope. Buenos Ayres, 306, 309; Lagarto, 375.

HYLA NIGRIPES Cope. Buenos Ayres, 311.

LIOHYLA RANOIDES Cope. *Lithodytes ranoides* Cope. *Proceeds. Amer. Philos. Soc.*, 1885, p. 275.

This species differs from the *L. rugulosa* Cope (*Proceeds. Amer. Philos. Soc.*, 1869, p. 160) in its more elongate muzzle and in the smaller and differently shaped tympanic membrane. In the *L. rugulosa* the membranum tympani is round, and is about equal to the eye; while in the *L. ranoides* it is a vertical oval of about half the same diameter. The belly of the *L. ranoides* is free from rugosities.

Three specimens of this species are in the collection, and they are very dissimilar in coloration, and neither of them resembles the type. They may be arranged thus.

- I. Light gray; no dorsal stripe or interocular cross-band. No. 333, near Buenos Ayres.
- II. Dark brown, a light interorbital crossband, and black W-shaped mark on interscapular region. No dorsal stripe. Type from Nicaragua. No. 14,179, U. S. National Museum.
- III. Dark brown, with a pale, narrow dorsal line, and pale interocular cross-band. No. 288, Terraba.
- IV. Dark brown above with a broad pale dorsal stripe, as wide as the internareal space. No interocular cross-band. No. 304, Buenos Ayres.

These specimens agree in having four dark spots on the upper lip, of which the anterior is below the nostril; in the legs being marked with a few dark-brown cross-bands; and in the femur being obscurely marbled behind. The vomerine teeth are close together, entirely within the interior border of the internal nares, and much posterior to the latter. In No. 304 the dorsal integument displays a fold from cranium to sacrum on each side of the wide dorsal stripe; on the external side of each of these anteriorly three short folds extend upwards and backwards from the orbit.

No. 288 is a female, and resembles in color the *Lithodytes melanostictus* Cope (*Journal Phila. Acad.*, 1875, p. 109), which is from alpine

Costa Rica. That species, however, has no digital webs, and the tympanic membrane is only half as large, its transverse diameter being only a quarter of that of the eye fissure. The vomerine teeth also are not so close together. Specimen No. 288 is a female, and is distended with eggs. There are no traces of dermal folds. In No. 333 there are traces of the folds. Dr. Boulenger (*Catal. Batr. Sal. Brit. Mus.*, Ed. ii, p. 201) describes a species of *Liohyla* under the name of *Hylodes palmatus*, although he places under it as synonymous the older names of *Ligla* (*Liohyla*) *guentherii* Keferstein and *L. rugulosa* Cope. The size of the tympanum, and length of hind limb are indefinitely described, but the back and sides are said to be tubercular, which is not the case in this species. Mr. Boulenger also states, rather indefinitely, that the toes of his *H. palmatus* are "one-third webbed." The palmation in *L. ranoides* extends to the extremity of the metatarsals. This is one-third the length of the first and second digits, but much less than a third the length of the other digits.

The eggs of this species are of extraordinary size, equaling large peas.

LITHODYTES FLORULENTUS, sp. nov.

In introducing a new species of Central American Lithodytes, it is necessary to point out clearly the distinctive features of those already known. I confine my attention at present to the species with plain frontoparietal bones, and therefore omit further reference to the *L. pelviculus*, *L. megacephalus* and *L. gulosus*, where there is a crest along the superolateral angle of the skull. The other species differ as follows:

I. Heel not reaching the muzzle.

Vomerine patches widely separated; digital dilatations large; colors plain.....*L. diastema* Cope.

Vomerine patches close together; digital dilatations small; colors variegated.....*L. florulentus* Cope.

II. Heel of extended leg reaching muzzle or beyond.

a. Tympanic drum equal half to two-thirds diameter of orbit.

Digital dilatations small, especially on hand.....*L. rhodopsis* Cope.

a. Tympanic drum small, one-fourth diameter of orbit.

Digital dilatations large, especially on hand.....*L. melanostictus* Cope.

The only specimen of the *L. florulentus* is damaged as to the integument of its head, which has been destroyed by agencies unknown to me. The skull with its muscles, and the rest of the body with the integument, are preserved. The head is short and depressed, and the canthus rostralis is not distinct. The length of the muzzle from the nostril to the orbit is about equal to the anteroposterior diameter of the latter, and the nostril is quite near the end of the nose. The tongue is subround, and is a little wider than long in its present condition. The internal nares are well forwards; and the vomerine teeth are in two fascicles which are close together, and are so far posterior to the nares as to be in transverse line with the pala-

tine ridges. They are also as far as their own diameter within the antero-posterior line of the internal nares. The ostia pharyngea are narrow slits about as long as the nares. The tympanic drum is destroyed, but the space for it is a vertical oval, with about half the anteroposterior diameter of the orbit. The heel of the extended hind limb reaches the anterior border of the orbit. The extremital dilatations are very small. There is a rather large oval internal or prehallucal tubercle which is entirely sessile; there is a small external tubercle. There are two palmar tubercles, and those of the anterior digits are distinct but flat; those of the posterior digits are less distinct. The integuments of the inferior and concealed surfaces are smooth; on that of the back a few small tubercles are present.

The color of the upper surfaces is gray dusted with blackish. The inferior or posterior surface of the hind legs is black, and this color is continuous with dark-gray cross-bands which cross the superior faces of the tibia and femur, four over each. The spaces between these cross-bands are scarlet. The posterior part of the sides and anterior part of the abdomen is blackish to brownish, with crimson and orange spots of various sizes and shapes, the largest in the groin. Three cross-bands on upper side of foot, and three across forearm. Coloration of head unknown.

Measurements.

	MM.
Total length of head and body.....	35
Length of head to posterior line of tympanum	12.5
Width of head at posterior line of tympanum.....	15
Interorbital width.....	3.5
Length of fore limb	20
Length of fore foot.....	9
Length of hind limb from groin.....	51
Length of hind foot	24
Length of tarsus	9

The only specimen of this handsome species contained in the collection is from Boruca, and is No. 327.

LITHODYTES RHODOPIS Cope, *Proceeds. Acad. Phila.*, 1866, p. 323; *Proceeds. Amer. Philos. Soc.*, 1869, p. 160. *Hylodes sallai* Günther, *Proceeds. Zool. Soc.*, London, 1868, 487, Pl. 38, Fig. 3. *Lithodytes podiciperus* Cope, *Journal Acad. Phila.*, 1875, p. 107, Pl. 23, Fig. 9. *L. habenatus* Cope, *l. c.*, p. 109. *L. muricinus* Cope, *l. c.*, p. 108, Pl. 23, Fig. 13.

After full comparison of the material at my disposal, I strongly suspect that all the forms described above as distinct species are simply varieties of a single variable one. In some young individuals the vomerine series of teeth appear more transverse, as in the individual called muricinus. In such small individuals, the pigment is apt to be brilliant. In

the present collection a small specimen of only 13 mm. in length has the entire superior surfaces of a bright violet, as in the specimen called *muricinus*; but it presents no structural difference from the form *habenatus*, and small examples of the form *podiciferus*. From Buenos Ayres; No. 331.

HYLODES STEJNEGERIANUS, sp. nov.

Muzzle flat, canthus rostralis distinct, concave, extremely little prominent. Nostril near the extremity and as far anterior to the eye as the long diameter of the eye slit. This latter dimension equals the diameter of the nearly round tympanic membrane. Integument of head smooth; that of back with a delicate median fold, and a fold on each side which diverges at the scapular region and extends to the orbit. Parallel to the laterodorsal fold is a dorsolateral fold on each side which terminates anteriorly near to the oblique fold just mentioned. Between these folds the integument is tubercular. Sides and belly roughened with small tubercles; breast and throat smooth. Tongue longer than wide, pyriform, scarcely notched. Vomerine teeth in two fascicles well behind the choanæ, and farther apart than each one is within the longitudinal line of the internal border of the nares. The heel of the extended hind limb reaches the anterior border of the orbit. Width of head 2 3 times in length of head and body. Digital enlargements small.

Color above a dark bistre brown, with a pink band extending on each side from the eye to the sacrum, passing above the tympanic membrane. Posterior limbs blackish brown, except the inferior side of the femora, which are a lighter brown. Fore limbs pink with brown cross-bands. Belly dirty white, the breast and throat densely dusted with brown. Head uniform blackish brown, with the exception that on the edge of the upper lip there are three pairs of pale vertical bars which represent the borders of three lip-spots.

Measurements.

	MM.
Length of head and body.....	15
Length of head to posterior border of tympana.....	5.5
Width of head at posterior border of tympana.....	5.5
Length of fore limb.....	11
Length of fore foot.....	2.5
Length of hind limb.....	24.5
Length of hind foot.....	11
Length of tarsus.....	4.5

It is only necessary to compare this species with the *H. polyptychus* Cope (*Proceeds. Amer. Philos. Soc.*, 1885, p. 276) from Nicaragua. In this species the top of the head and especially the eyelids are tubercular, while they are smooth in the *H. stejnegerianus*, and the integument generally is covered with larger and more numerous warts. The muzzle is shorter

and wider, and the tympanic disc is only two-thirds the eye diameter. Finally, the series of vomerine teeth are more transversely extended.

This species is dedicated to Dr. Leonard Stejneger, the distinguished zoölogist now in charge of the herpetological department of the U. S. National Museum, Washington. It is from Palmar; coll. No. 295.

LEPTODACTYLUS QUADRIVITTATUS, sp. nov.

Form lanceolate; muzzle narrow and prominent, nostril a little nearer the orbit than the extremity of the muzzle, but further from the orbit than the diameter of the latter. Extended hind limb reaching the anterior orbital border with the heel. Interorbital space wider than eyelid. Skin smooth except some warts about the scapular region. Two stout glandular ridges on each side of the vertebral median line. A discoidal abdominal fold. Subdigital tubercles well developed; ungual phalanges not dilated. A distinct oval internal metatarsal tubercle.

The vomerine teeth are in two arched series which extend outwards to the line of the external border of the choanæ, and approach close together on the median line. The choanæ are large and about equal the ostia pharyngea. Tympanic disc a horizontal oval, its long diameter equal two-thirds that of the eye. Tongue a wide longitudinal oval, openly notched behind.

The ground color above and on the sides is gray, which is marked above with four longitudinal black bands. The two median of these are wider and commence at the end of the muzzle, and extend to the extremity of the urostyle. They expand above and over the eyelids. The lateral bands commence narrow at the orbits, and widen on the sides, extending to the groin. The median dorsal band of the ground color is paler than the rest of the ground, and has a pinkish tinge, which is probably more distinct in life, judging from traces of pink near the orbit. The side of the head is black to and including the tympanic disc; excepting a pale stripe which passes below the eye to the lower border of the tympanic disc. It is crossed by two or three black lines which descend from the eye to the black lip. A pale crescent in front of tympanic disc. A pale line extends upwards and forwards from the groin on the side. The limbs are all cross-banded, except the tibia, whose upper surface displays an irregular, wide, longitudinal band, which is a marked peculiarity. Posterior face of femur bounded below by a pale line, which is bordered above by a brown band. Tibia uncolored, foot brown, below.

Measurements.

	MM.
Length of head and body.....	37
Length of head to line of posterior edge of tympana.....	14
Width of head at line of posterior edge of tympana.....	15
Length of anterior limb from axilla.....	18
Length of anterior foot.....	8

Measurements.

MM.

Length of posterior limb	65
Length of posterior foot.....	31
Length of tarsus.....	12

From Buenos Ayres; No. 365.

This species is allied to the *L. labialis* Cope and the *L. longirestris* Blgr.; the former Mexican, the latter Brazilian. In the latter the dentition and form of head are similar; but the front is narrower than the eyelid, the hind legs are longer (the heel reaching the end of the muzzle), and there are but two dorsal glandular folds. The length of the limbs is as in *L. labialis*, but the series of vomerine teeth are further extended outwards, the muzzle is longer; and the glandular tubercles of the groin of the *L. labialis* are wanting. The original description of the latter species was taken from young individuals, and includes the statement that the species has no discoidal abdominal fold. This is a mistake; the fold is present.

ATELOPUS VARIUS Stannius.

Nos. 296-298, Palmar.

DENDROBATES TINCTORIUS Wagl., subsp. AURATUS Gird.

Nos. 290, 369, 370, 371, from Palmar. No. 339 from Talamanca is similar, but the pale cross-bands both above and below are much wider, much reducing the area of the black ground color.

Subspecies VITTATUS, nova. In this color form the ground is black everywhere, and the only marks are a pale stripe on each side, which passes from above the groin above the extremities of the diapophyses of the vertebrae, on the upper eyelids, and joins its mate on the end of the muzzle. This form has the lateral stripes of the *D. talamanca*, but resembles it in no other respect. The second finger equals or is longer than the first. In *D. talamanca* it is shorter. Nos. 367, 368, from Buenos Ayres.

REPTILIA.

LACERTILIA.

MOCOA CHERRIEI, sp. nov.

This species resembles the *M. assata*, but differs conspicuously in these respects: First, the limbs are relatively considerably more elongate, for when appressed to the side they overlap by the length of the anterior foot. In the *M. assata* they fail to meet by the length of the fore leg. Second, the scales are more numerous, being in thirty-four rows; and those on the sides are smaller than those on the back and belly. In *M. assata* the number of rows does not exceed thirty, and the scales are of equal sizes. Thirdly, the coloration is different. The ground is blackish olive, and there is a black dorsolateral band which has a not very distinct pale dorsal border. A faint pale median dorsal band is bordered on each side by a narrow black line. There are small pale dots on various scales, which

are especially conspicuous on the sides of the body and tail. On the latter they are arranged in transverse rows. Fore legs blackish with pale variegations; hind legs blackish. The black lateral band extends to the end of the muzzle, and a less regular one extends from the orbit to the humerus. Head above pale brown. Fourth, the tail is compressed; in *M. assata* the section is round.

Measurements.

	MM.
Total length	56
Length of head and body.....	23.5
Length to axilla	11
Length of fore limb.....	7
Length of hind limb	10

Palmar; No. 292. This species, the second one of the genus found in America, is dedicated to Mr. George K. Cherrie, the well-known zoölogist of San José, who has added much to our knowledge of the life of Costa Rica.

GYMNOPHTHALMUS LÆVICAUDUS Cope. *Tretioscincus lævicaudus* Cope.

Epaphelus sumichrasti Cope. *Gymnophthalmus sumichrasti* Boulenger.

No. 287, Terraba.

AMIVA QUADRILINEATA Hallow. (*Cnemidophorus*). *A. gabbiana* Cope, *Journ. Acad. Phila.*, 1875, p. 117, Pl. 28, Fig. 3.

Why Boulenger regards this lizard as identical with the *A. undulata* is difficult to understand. The differences are numerous, that in the form and size of the gular scales being especially marked. The species was characterized by Hallowell from small individuals; the present collection contains one (No. 379) which measures (with tail) 205 mm., which equals the types of *A. gabbiana*.

Nos. 303, 313, 322-324, Buenos Ayres; 373, Lagarto; 379, Boca Sacate.

I have before me fifteen specimens of *A. undulata*, and find that ten of these have three supraorbital plates and four have four. In none of them are the gular scales so small as in the *A. quadrilineata*. The specimens are from various localities between middle Vera Cruz and Guatemala inclusive.

AMIVA FESTIVA Licht.

Boruca, No. 325; one specimen.

AMIVA LEPTOPHRYS, sp. nov.

Abdominal plates in eight rows, those of the external row as large as those of the next row. Keels of caudal scales forming straight lines. Gular scales larger in several longitudinal rows, the two median especially

enlarged. One row of seven very large scales on the mesoptychium. Anal scuta consisting of two large medians surrounded by numerous smaller scales, separated by several rows from the vent. Femora with only three rows over the distal fourth of the length; within this point small rows separate the plates from the femoral pores; the latter twenty-four in number. Tibial plates in three rows, those of the internal very small; no heel spurs. The heel of the extended hind limb reaches the elbow. Five large labials to below the orbit. One postnasal and one large loreal longer than high. Two preoculars, wide and keeled at their middle. A preculo-loreal resting on the labials. Six inferior labials and six infralabials, the last small. Three supraorbitals; first and second longer than wide, the third long as wide. Two parietals on each side; the interparietal separated from them and the frontoparietals by small scales.

Color brown above and olivaceous below. On the line where the back passes into the side, a series of dark-brown spots situated close together, and presenting angles upwards and downwards. There are about a dozen between the groin and the scapular region, and a series of indistinct pale spots is seen between their inferior apices. From their superior apices, narrow and indistinct dark-brown lines cross the back, sometimes alternating with each other on the median line.

Measurements.

	MM.
Length to extremity of tail.....	327
Length to vent	102
Length to axilla.....	37
Length to posterior border of ear (axial)	25
Length of fore leg.....	42
Length of fore foot.....	19
Length of hind leg.....	88
Length of hind foot.....	47

From Buenos Ayres, No. 318; one specimen.

This species is allied to both the *A. festiva* and *A. undulata*, but differs from both materially in the scutellation of the head. The middle and posterior supraorbital plates are broader than long in these species, and the superior preocular is narrower, and is keeled near to its anterior border in whole or in part. The interparietal plate is in contact with the surrounding scuta, and not, as in *A. leptophrys*, surrounded by small scales.

CELESTUS STEINDACHNERII Cope.

From Boruca; No. 300; one specimen. This individual has thirty-six longitudinal series of scales, which have nine longitudinal keels on the middle and posterior parts of the body and on the tail, and are without prominent median keel. Anterior scales smooth. Two prefrontals. This specimen presents characters of both the *C. steindachnerii* and the *chaly-*

bæus Cope, and in some respects differs from both. Whether there is one variable species or not, more abundant material is necessary to decide.

CTENOSAURA, sp. young, Nos. 376, 377.

IGUANA TUBERCULATA, L., No. 378.

ANOLIS LONGIPES, sp. nov.

Size of *A. biporcatus*; head short, wide; limbs long, the posterior when extended reaching the end of the nose. Tail cylindric, covered with scales of equal size, which are freely keeled above and below. Tibia equal length of head to auricular meatus, and longer than length to occiput. Scales of body of medium size, subequal, those of belly imbricate and keeled; those of back not imbricate and smooth. Occipital plate rather smaller than the large auricular meatus, and separated by two rows of scales from supraorbital rows. The latter are separated from each other by two rows of scales. Frontal ridges well defined, and separated from each other by five and six rows. Five loreal rows and six supraorbital rows, the latter diminishing in size gradually outwards. Scales of limbs keeled. Scales of top of head, including supraorbitals, with a single keel. Tail elongate.

Color brown above, dirty white below. A dark-brown band originates on each side of the occiput, and extends continuously on the basal part of the tail. On the body a delicate brown line extends above and parallel to it. A dark-brown cross band between orbits, and a dark-brown chevron with the angle pointing backwards on the prefrontal concavity. Four broad dark cross-bands across lips; limbs indistinctly cross-banded.

<i>Measurements.</i>	<i>MM.</i>
Total length.....	245
Length to vent.....	83
Length to axilla	40
Length to auricular meatus posteriorly.....	23
Width at auricular meatus posteriorly.....	16
Length of fore limb.....	39
Length of fore foot.....	17
Length of hind limb (to acetabulum).....	80
Length of hind foot.....	34

Palmar, No. 343, adult; No. 299, Boruca, young.

The small size of the fan in No. 343 indicates that it is a female; it is much better developed in the young, No. 299, which is quite small. In the young, the scales of the head are not keeled, and the keels of the adominal scales are less distinct. The color is a bright yellow, with a broad brown band surrounding the head above and below at the orbit, and another capping the nose and chin, the loreal region remaining yellow. The yellow cross-band on the chin which separates these two areas leaves a visible trace on the adult.

This species is allied to the *A. bransfordii* Cope, which has been found so far in Nicaragua only. The *A. bransfordii* was described from a specimen about half the size of the type of *A. longipes*, but of very similar proportions. In various details of structure they are similar, but in the *A. bransfordii* the scales of the head and belly are smooth, and the latter are longer than the dorsal scales. The latter are quite small, which cannot be said of those of the *A. longipes*. Finally the coloration is very different. The affinities of *A. longipes* to *A. capito* Pet. are not distant. In the latter species the head is still shorter and wider, and it is covered above and on the sides with larger and fewer scales, which are without keels.

ANOLIS INTERMEDIUS Peters.

San José, No. 338.

ANOLIS TROCHILUS Cope.

Palmar, 319; Sierpe, 383, 384; loc? 291. No. 384 is a male with very large fan. There is a trace of carination on the median dorsal scales, and the tail is compressed, and the median superior row of scales form a rather prominent serrate outline.

BASILISCUS VITTATUS Wiegman. From Sierpe.

OPHIDIA.

COLOBOGNATHUS HOFFMANNI Peters.

San José, No. 347.

RHADINÆA IGNITA Cope.

Boruca, No. 348. This specimen differs from the type in having only one preocular plate, and in having the angle of the third superior labial plate enter the orbit. The first-mentioned character was variable in the specimens which served as types. In coloration the dots on the gastrosteges are confined to the anterior sixth of the body, and the belly is yellow and not red. There are 117 gastrosteges, while in the type there are 128. Bocourt has shown the great variability in the number of gastrosteges in this genus. I suspect, however, that the specimen sent by Mr. Cherrie represents a local race.

DRYMOBIUS RHOMBIFER Peters.

Palmar, No. 382.

DRYMOBIUS CÆRULEUS Fisch.

Boruca, No. 381.

DRYMOBIUS PERCARINATUS, sp. nov.

Scales lanciform, in seventeen longitudinal rows, all keeled except the first, the second feebly. Head elongate; eyes large, their horizontal diameter equal the space from their anterior border to the posterior border

of the rostral plate. Rostral plate a little visible from above; internasals subquadrate; frontal about as wide at middle as each superciliary, and a little shorter than the parietals. Loreal longer than high; one preocular, which does not reach the frontal. Two postoculars, the superior the longer, and half bounded posteriorly by the parietal. Temporals, 2-2, the anterior elongate. Superior labials nine, fourth, fifth and sixth in orbit; all longer than high, except the second, which is quadrate, and the seventh, which is subtriangular. The eighth is much the longest. Inferior labials ten; geneials long, the posterior the longer. Gastrosteges 155; anal 1-1; urosteges 145.

Color above, brown; below, cream color. Small rusty spots appear on the sides throughout the length, at intervals of two scales, on the fourth or fourth and fifth rows; and they are bounded posteriorly by a small deep brown spot. From the middle of the body posteriorly, the first three rows of scales are paler than those above them, and the third row carries a small black spot on each scale. These spots become confluent into a narrow stripe, which is distinct on the posterior fourth of the body and on the side of the tail. The scales of one and two rows above this stripe are paler than those of the median dorsal region. Head uniform brown, upper lip and below uniform yellowish.

Total length 815 mm.; total length of tail 352 mm.; length of head to canthus oris, 20 mm.; interorbital width 8 mm.

Bornca, No. 326, adult; Buenos Ayres, No. 336, young. In the young, the anterior half of the body presents the cross-bars characteristic of the young of this genus. On the posterior half the cross-bars are broken up into a series of small dark spots on each side, and a narrow longitudinal lateral stripe below them, as has been already shown to exist in the adult.

SYNCHALINUS CORALLIOIDES, gen. et sp. nov.

Char. gen.—Teeth equal, smooth. Scales with two terminal fossæ. Body compressed, gastrosteges sharply angulated near extremities; head distinct. Pupil round. Anal plate entire; subcaudals in two rows. Cephalic plates normal except that the nasals and loreal are fused into a single, elongate plate.

In this genus we have apparently a colubrine snake of arboreal habits, which has assumed a boæform character rather than that characteristic of the tree-snakes proper. In the thin scales and fusion of lateral head plates we have a resemblance to the little known genus, *Amastridium*, but that form is of entirely terrestrial habit.

Char. specif.—This snake has at first sight considerable resemblance to some of the color varieties of the tree-boas, *Corallus hortulanus*. In its color tints and patterns it also resembles the *Spilotes lunulatus* m. The body and tail assume a coiled attitude in spirits like the species of *Coralus*, and the sharp angles of the gastrosteges show that the habits are similar.

Scales in twenty-three rows, the first and several median composed of

the largest scales. Three or four median rows faintly keeled on the posterior three-fourths the length of the body. Muzzle subtruncate; eye large, its horizontal diameter equal the distance from its anterior border to the posterior border of the rostral plate. Rostral plate slightly visible from above; internasals subquadrate; prefrontals wider than long. Frontal shorter than superciliaries, with concave lateral borders; as wide at the middle as a superciliary. Parietals as wide as long, and regularly rounded in posterior outline. Nasal part of the nasoloreal plate with the superior and inferior borders parallel; the superior border posterior to the nasal part, sloping downwards to a subacute angle with the inferior border, which is in contact with the wide preocular. The latter barely reaches the frontal on one side, and fails to do so on the other. Postoculars two, the superior larger and half bounded posteriorly by the parietal. Temporals 2-2; the inferior anterior temporal in contact behind with the parietal. Superior labials eight, the last very long on both sides, and probably consisting of two plates fused. Fourth, fifth and sixth plates bounding orbit, the seventh a horizontally placed parallelogram. Inferior labials 12-13, much divided anteriorly, the posterior six all longer than deep. Geniials elongate, the posterior pair longer. Gastrosteges 209; anal 1; urosteges 134. Total length 450 mm.; length of tail 125 mm.; length of head to rectus oris 20 mm.

The ground color of the upper surfaces of this snake is a rich yellowish brown. On the narrow dorsal region is a median series of parallelogrammic spots of an iron-rust color, each of which has a small blackish spot at its anterior extremity. On the sides are wide vertical spots of iron-rust color, which are of equal width with the length of the dorsal spots, and which sometimes coincide with the latter, forming with them broad crossbands. The chin and throat are cream-colored, but this color becomes clouded, first with light, then with darker brown, and then with rusty red with blackish specks, till the middle line of the abdomen posteriorly is a dark mahogany. Opposite each vertical lateral bar is a dark spot on the upturned extremity of the gastrostegæ. These become darker posteriorly, forming subquadrate mahogany spots. Immediately below them a wide pale border further varies the colors of the abdomen. A dark-brown band passes to the neck posterior to the eye, and three descend from the eye across the upper lip. Top of head rich yellowish brown, with a mahogany spot on the posterior part of the prefrontal common suture, the posterior part of the frontal, on the middle of each parietal, and on the posterior external border of each parietal. Loreal region mahogany. Black spots on the anterior and middle inferior labial plates.

Buenos Ayres, one specimen, No. 340. This is a handsome species, whose colors are well calculated to conceal it on tree trunks and branches where rusty colors predominate. In general character they are a good deal like those of the *Amastridium veliferum* of Veragua.

SIBON SEPTENTRIONALE Kenn., subsp. RUBRICATUM.

No. 346, from Boca Mala, represents a form of this species to which sub-specific rank may be at least accorded. If additional specimens confirm the characters it may even rank as a species. A decision cannot now be reached, as only a single specimen has been sent by Mr. Cherrie.

In this form the body is robust, and the head is not separated by a narrow neck, although the temporal region is somewhat swollen. The muzzle is short, and there are eight superior labials, of which the fourth and fifth enter the orbit. Oculars, 2-2, the lower preocular, labial. Twenty-three rows of scales. Five undivided scuta posterior to the vent. The color of the dorsal regions is bright red; of the inferior regions, light salmon color dusted with brown. There are sixty-one transversely oval black spots on the back, which cover twelve rows of scales transversely, and two and a half to three and a half rows longitudinally. Small black spots alternate with them on the third row of scales; and a less definite row of smaller spots alternate with these on the second and third rows. A black band extends from the eye to the last labial plate, and behind and above it a parallel black band extends from the parietal plate. The extremities of these bands are fused with the first dorsal spot, the interspaces being red. Superior labials red, with a black spot in the centre of each plate. Inferior labials black spotted. Top of head dark brown, bordered posteriorly on outline of parietal plates by a red crescent. This is bordered posteriorly by a black crescent, and is traversed by a median black stripe which connects the dark brown of the vertex with the anterior four black dorsal spots. Tail blackish red, spotted above. Total length, 660 mm.; of tail, 133 mm.

I have seen the Mexican *Sibon septentrionale* living, and the ground color is light brown, and not red. The color pattern of the form *rubricatum* is peculiar about the head, but in other respects it resembles individuals of the *S. septentrionale* which have numerous dorsal spots.

OXYBELIS ACUMINATA Wied.

Terraba, No. 289; No. 385 without locality.

ELAPS NIGROCINCTUS Girard.

Buenos Ayres, No. 341; Boruca, No. 329.

Summary.

	NO. OF SPECIES.	NEW SPECIES.
Urodela.....	2	1
Salientia	10	3
Lacertilia	12	3
Ophidia.....	9	2
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Totals	33	9